

Red and Blue text - City review comments
Purple text - HDR's response

30" FORCE MAIN RELOCATION UNDER I-20

PRELIMINARY 30% DESIGN JUNE 2024

How will construction crews access the area under the bridge for pipeline relocation? Include the construction entrances on the plans. this plan is currently being developed

What is the status of the inquiry into the Corps permit? a new permit application is being prepared for areas outside DOT RW

No other existing utilities are shown. Please include. all known utilities are shown

If there are any existing ARVs, they must be included on the plans. no, none within limits of project

A tie-in plan will be required and include instructions on the plan sheet. added

If blasting is needed, a blasting plan will be required and include instructions on the plan sheet. no blasting is anticipated based on all geotech borings

A spill prevention plan will be required to include instructions on the plan sheet. this plan is currently being developed

A shut-down and de-watering plan will be required and include instructions on the plan sheet. bypass plan added, includes shutdown and dewatering of existing force main

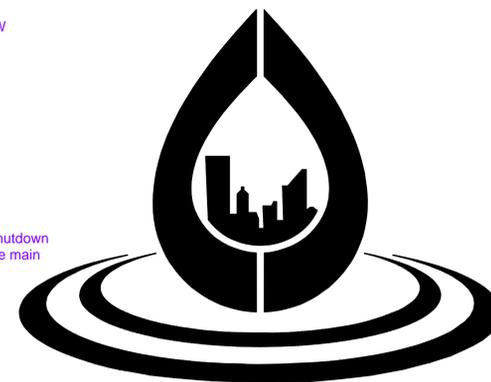
A bypass plan will be required to include instructions on the plan sheet. added

Approval of shut-down/storage plans must be requested in writing not less than 30-days in advance of the proposed date. This date must then be confirmed at 15-days, 10-days, and 5-days prior to the work. This requirement must be included on the plan sheet. note has been added

What is the status of the geotech field work/processed results? we are checking status

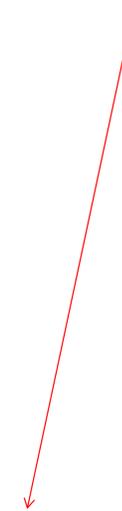
Force main markers must be shown to be placed along the newly relocated force main. added

Please add to the plans the property information (Owner, address and TMS) to the properties shown. added



Columbia Water

Include overall map showing the location of the construction added



HDR Engineering, Inc.
of the Carolinas

1201 Main St., Suite 800
Columbia, SC 29201

CITY OF COLUMBIA

This 30% submittal has been reviewed by the City of Columbia. Comments have been added, and it is being returned to HDR. Please proceed and complete 60% plans.
07/10/2024



CITY MANAGER
TERESA B. WILSON

DIRECTOR OF ENGINEERING
DANA R. HIGGINS, P.E.

CITY COUNCIL
EDWARD H. McDOWELL, JR.
WILL BRENNAN
DR. ADITI BUSSELLS
TINA A. HERBERT
PETER M. BROWN
TYLER D. BAILEY

MAYOR
DANIEL J. RICKENMANN

SHEET NO:
00G-100



DEPARTMENT OF ENGINEERING
P.O. BOX 147
COLUMBIA SOUTH CAROLINA 29217

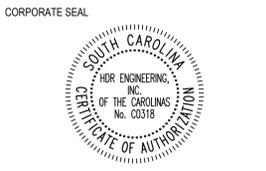
PROJECT
**30" FORCE MAIN
RELOCATION
UNDER I-20**

REVISION

MARK	DATE	DESCRIPTION
A	06/2024	30% DESIGN

HDR DRAWING INFORMATION

HDR PROJECT NUMBER	10207730
PROJECT MANAGER	
CIVIL ENGINEER	MATTHEW SHULTZ, PE
DRAWN BY	JIM KROOSWYK



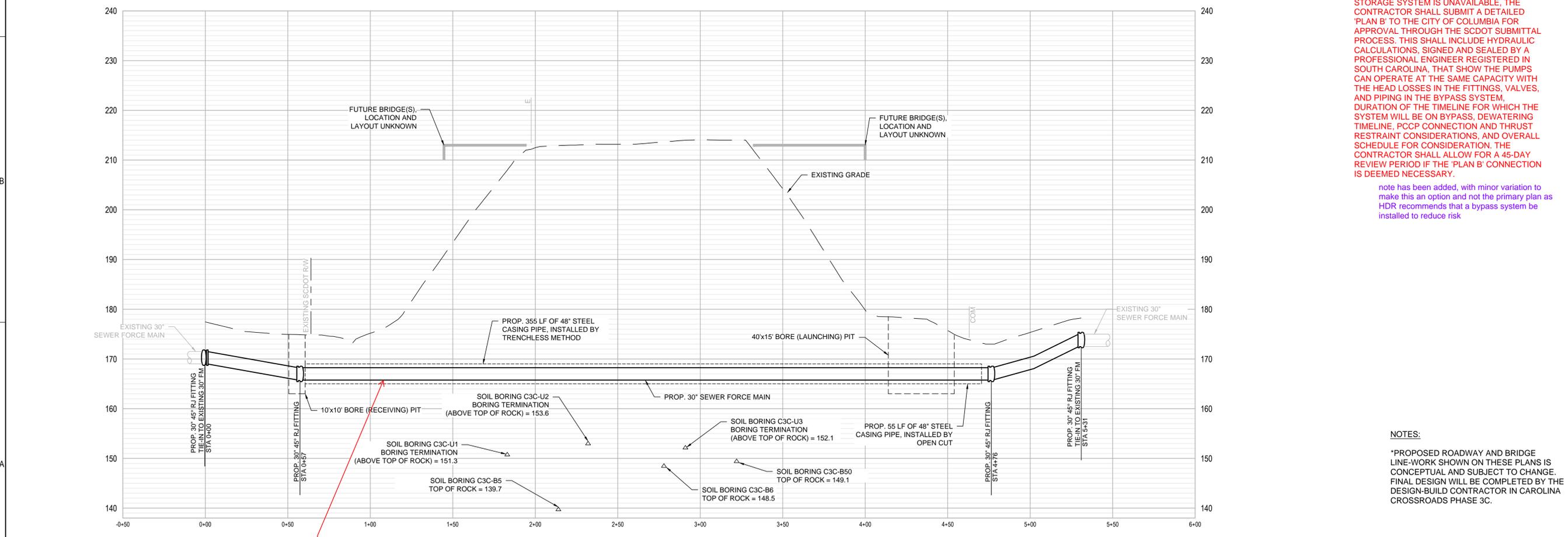
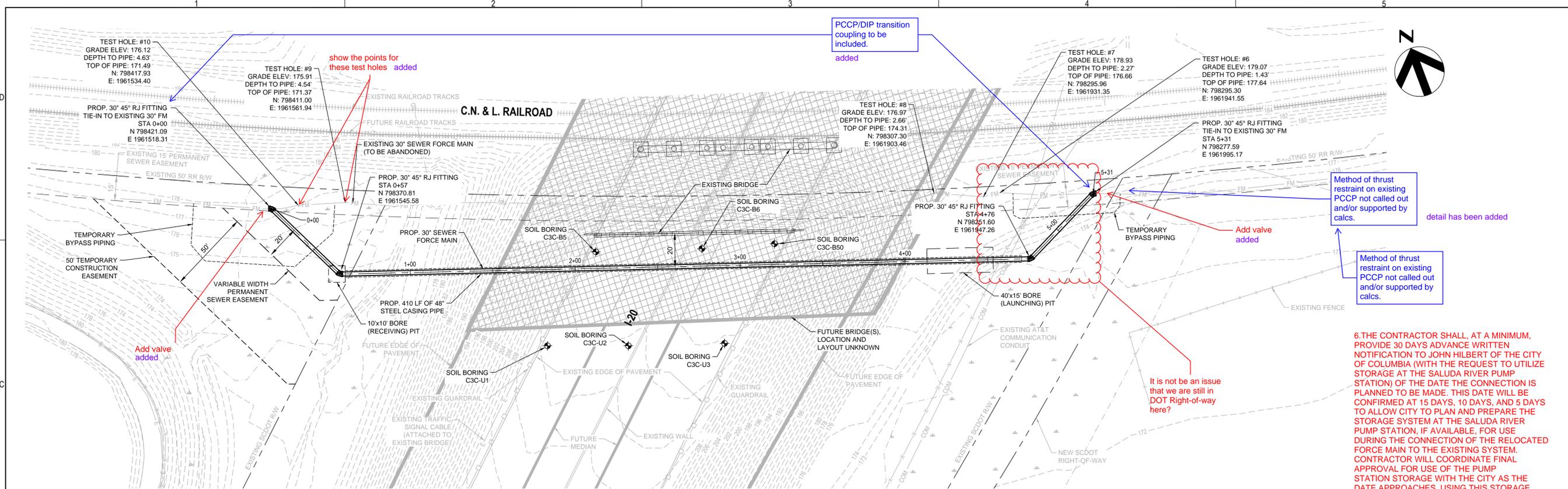
ENGINEER SEAL

PRELIMINARY

SCALE H: 1" = 30'
V: 1" = 10'

SHEET NAME
**PLAN AND PROFILE OF
NEW 30" FORCE MAIN
STA 0+00 - STA 5+31**

SHEET NUMBER
**01C-100
SHEET 2 OF 4**



Method of thrust restraint on existing PCCP not called out and/or supported by calcs. detail has been added

Add valve added

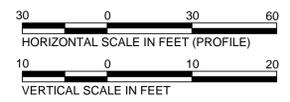
Method of thrust restraint on existing PCCP not called out and/or supported by calcs.

It is not be an issue that we are still in DOT Right-of-way here?

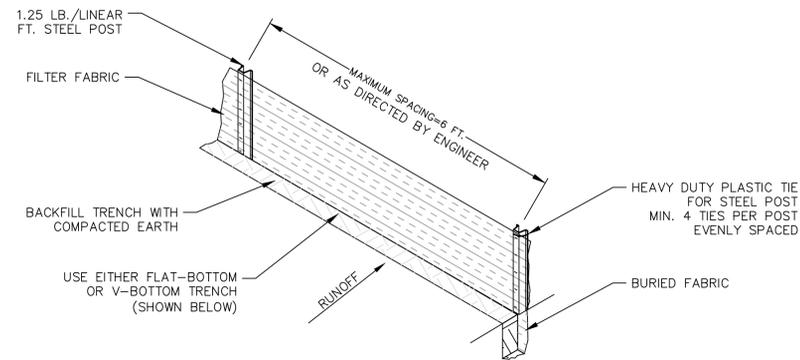
6. THE CONTRACTOR SHALL, AT A MINIMUM, PROVIDE 30 DAYS ADVANCE WRITTEN NOTIFICATION TO JOHN HILBERT OF THE CITY OF COLUMBIA (WITH THE REQUEST TO UTILIZE STORAGE AT THE SALUDA RIVER PUMP STATION) OF THE DATE THE CONNECTION IS PLANNED TO BE MADE. THIS DATE WILL BE CONFIRMED AT 15 DAYS, 10 DAYS, AND 5 DAYS TO ALLOW CITY TO PLAN AND PREPARE THE STORAGE SYSTEM AT THE SALUDA RIVER PUMP STATION, IF AVAILABLE, FOR USE DURING THE CONNECTION OF THE RELOCATED FORCE MAIN TO THE EXISTING SYSTEM. CONTRACTOR WILL COORDINATE FINAL APPROVAL FOR USE OF THE PUMP STATION STORAGE WITH THE CITY AS THE DATE APPROACHES. USING THIS STORAGE SYSTEM TO DIVERT WASTEWATER FLOW OFF OF THE EXISTING FORCE MAIN IS LIMITED TO 24-HOURS. A COMPREHENSIVE TIMELINE SHALL BE SUBMITTED TO THE ENGINEER AND CITY FOR APPROVAL. IN THE EVENT THAT THE STORAGE SYSTEM IS UNAVAILABLE, THE CONTRACTOR SHALL SUBMIT A DETAILED 'PLAN B' TO THE CITY OF COLUMBIA FOR APPROVAL THROUGH THE SCDOT SUBMITTAL PROCESS. THIS SHALL INCLUDE HYDRAULIC CALCULATIONS, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN SOUTH CAROLINA, THAT SHOW THE PUMPS CAN OPERATE AT THE SAME CAPACITY WITH THE HEAD LOSSES IN THE FITTINGS, VALVES, AND PIPING IN THE BYPASS SYSTEM, DURATION OF THE TIMELINE FOR WHICH THE SYSTEM WILL BE ON BYPASS, DEWATERING TIMELINE, PCCP CONNECTION AND THRUST RESTRAINT CONSIDERATIONS, AND OVERALL SCHEDULE FOR CONSIDERATION. THE CONTRACTOR SHALL ALLOW FOR A 45-DAY REVIEW PERIOD IF THE 'PLAN B' CONNECTION IS DEEMED NECESSARY.

note has been added, with minor variation to make this an option and not the primary plan as HDR recommends that a bypass system be installed to reduce risk

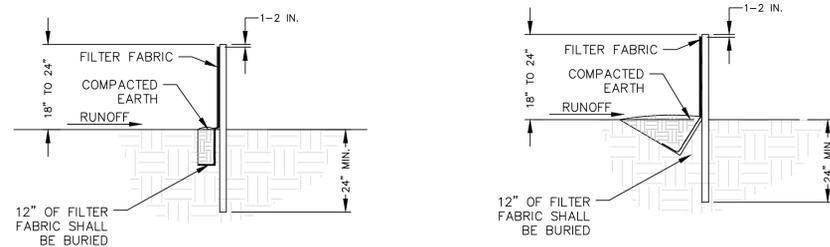
NOTES:
*PROPOSED ROADWAY AND BRIDGE LINE-WORK SHOWN ON THESE PLANS IS CONCEPTUAL AND SUBJECT TO CHANGE. FINAL DESIGN WILL BE COMPLETED BY THE DESIGN-BUILD CONTRACTOR IN CAROLINA CROSSROADS PHASE 3C.



The casing is shown as flat, but should be slightly angled down on a minimum slope. slope has been added



SILT FENCE INSTALLATION DETAIL



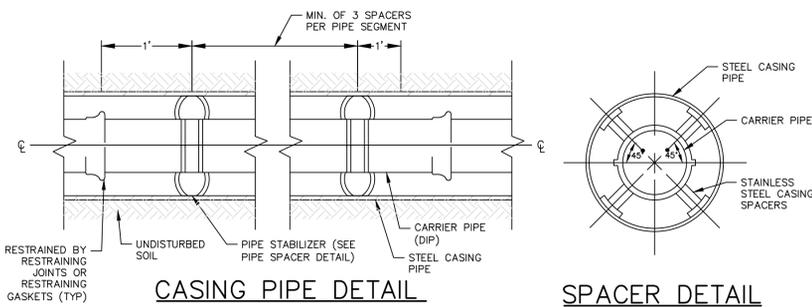
FLAT-BOTTOM TRENCH DETAIL V-SHAPED TRENCH DETAIL

STANDARD SILT FENCE DETAIL

NOT TO SCALE

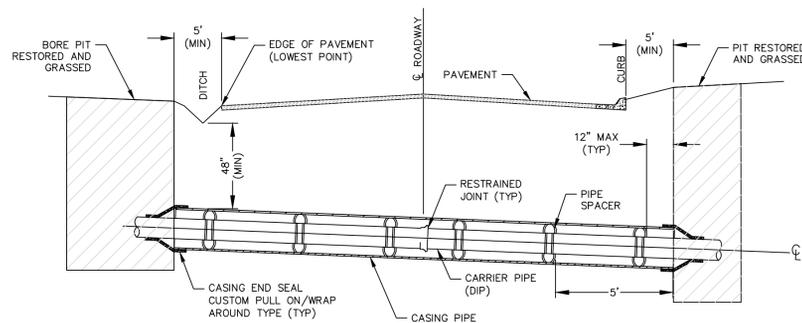
NOTES:

- SILT FENCE CHECKS MUST BE LOCATED EVERY 100 FEET MAXIMUM AND AT LOW POINTS ALONG THE FENCE LINE.
- ONLY STEEL POSTS MAY BE USED. POSTS SHALL BE A MINIMUM OF 5 FEET LONG AND INSTALLED TO A MINIMUM DEPTH OF 24 INCHES WITH NO MORE THAN 3 FEET OF THE POST ABOVE GROUND. STEEL POSTS SHALL WEIGH A MINIMUM OF 1.25 POUNDS PER FOOT AND HAVE PROJECTIONS FOR FASTENING THE FABRIC TO THE POST. AT LEAST 1 TO 2 INCHES OF THE POSTS SHALL EXTEND ABOVE THE TOP OF THE FABRIC. POST SPACING WILL BE A MAXIMUM OF 6 FEET ON CENTER.
- ATTACHED FABRIC TO STEEL POSTS USING HEAVY DUTY PLASTIC TIES THAT ARE EVENLY SPACED AND PLACED IN A MANNER TO PREVENT SAGGING OR TEARING OF THE FABRIC. IN ALL CASES, TIES SHOULD BE AFFIXED IN NO LESS THAN 4 PLACES.



CASING PIPE DETAIL

SPACER DETAIL

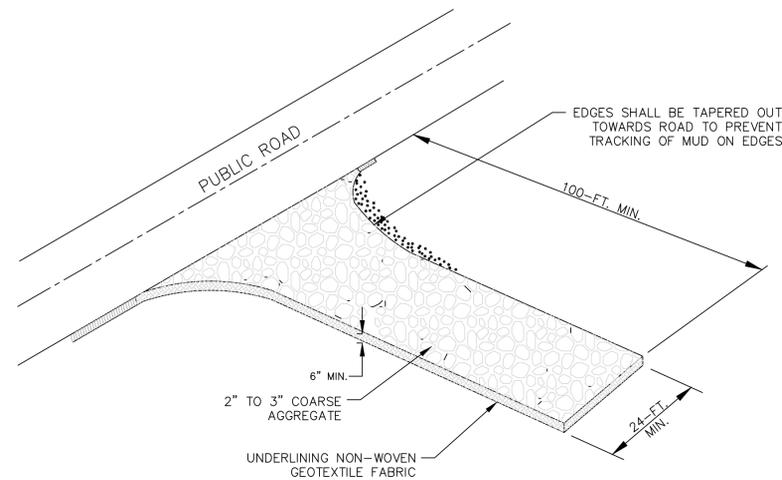


BORE AND JACK AND CASING DETAIL

NOT TO SCALE

NOTES:

- STEEL CASING LENGTH SHALL BE IN ACCORDANCE WITH SCDOT "A POLICY FOR ACCOMMODATING UTILITIES ON HIGHWAY RIGHTS-OF-WAY OR "RAILROAD SPECIFICATIONS FOR PIPELINE OCCUPANCY" AND THE SPECIFICATIONS.
- CASING PIPE AND CARRIER PIPE DIAMETERS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS.
- USE SPIDER SUPPORTS (SEE DETAIL) TO MOVE CARRIER PIPE INTO CASING PIPE. SPACING OF SPIDERS WILL BE DICTATED BY THE LENGTH OF CASING PIPE AND NUMBER OF JOINTS OF CARRIER PIPE.
- MINIMUM OF 3 SPACERS PER JOINT OF PIPE.
- SCDOT REQUIRES A MINIMUM OF 48" OF COVER BENEATH ALL SCDOT ROADWAYS.



TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT TO SCALE

NOTES:

- STABILIZED CONSTRUCTION ENTRANCE SHOULD BE USED AT ALL POINTS WHERE TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE AND MOVING DIRECTLY ONTO A PUBLIC ROAD.
- INSTALL A CULVERT PIPE ACROSS THE ENTRANCE WHEN NEEDED TO PROVIDE POSITIVE DRAINAGE.
- IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WAS WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE. WASHDOWN AREAS IN GENERAL MUST BE ESTABLISHED WITH CRUSHED GRAVEL AND DRAIN INTO A SEDIMENT TRAP OR SEDIMENT BASIN. CONSTRUCTION ENTRANCES SHOULD BE USED IN CONJUNCTION WITH THE STABILIZATION OF CONSTRUCTION ROADS TO REDUCE THE AMOUNT OF MUD PICKED UP BY VEHICLES.
- REMOVE ALL VEGETATION AND AY OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA.
- DIVERT ALL RUNOFF AND DRAINAGE FROM STONES TO A SEDIMENT TRAP OR BASIN.
- INSTALL A NON-WOVEN GEOTEXTILE FABRIC IN ACCORDANCE WITH SCDOT'S STANDARD SPECIFICATION, LATEST EDITION, PRIOR TO PLACING ANY STONE.
- MINIMUM DIMENSIONS OF THE ENTRANCE SHALL BE 24 FEET WIDE X 100 FEET LONG, AND MAY BE MODIFIED AS NECESSARY TO ACCOMMODATE SITE CONSTRAINTS.
- CHECK MUD AND SEDIMENT BUILDUP, AS WELL AS PAD INTEGRITY. RESHAPE THE STONE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
- WASH OR REPLACE STONES AS NEEDED AND AS DIRECTED BY THE ENGINEER. THE STONE IN THE ENTRANCE SHOULD BE WASHED OR REPLACED WHENEVER THE ENTRANCE FAILS TO REDUCE MUD BEING CARRIED OFF SITE BY VEHICLES.
- IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING. FLUSHING SHOULD ONLY BE USED WHEN THE WATER CAN BE DISCHARGED TO A SEDIMENT TRAP OR BASIN.
- REPAIR ANY BROKEN PAVEMENT IMMEDIATELY.

OWNER



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CORPORATE SEAL



ENGINEER SEAL

PRELIMINARY

SCALE NTS

SHEET NAME

DETAILS 2

SHEET NUMBER

02C-101
SHEET 4 OF 4